BennettMaths will be live on TikTok the night before paper 2, going through all the predicted papers.
Tuesday 2nd June at 8pm

Candidate surname	Other names

Pearson
Edexcel

Best Guess Paper – 2H Calculator

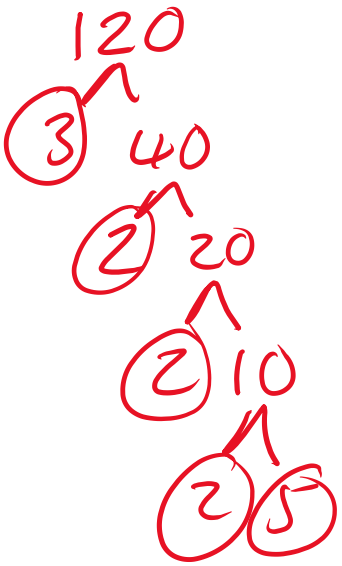
Within this booklet you will find my best guess at which topics might be on the first Edexcel Higher gcse maths paper.

There may be other topics that appear on paper 1, so please ensure that you continue to revise all topics.

The paper consists of 21 questions totalling 80 marks.

1

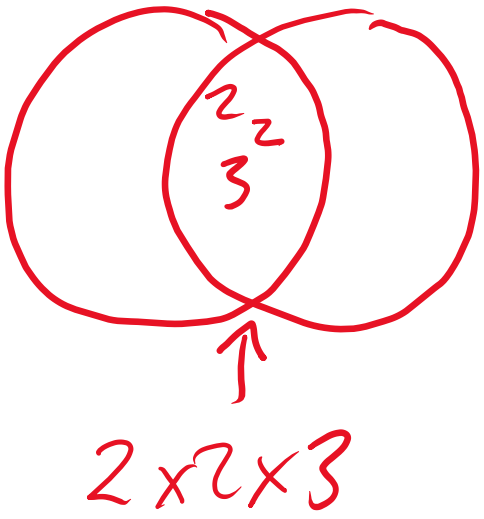
(a) Express 120 as a product of primes



$2^3 \times 3 \times 5$

(2)

(b) Hence, or otherwise, find the highest common factor (HCF) of 120 and 84



12

(2)

(Total for Question 1 is 4 marks)

2

Solve algebraically

$3x + 2y = 9.5$ ×5
$7x - 5y = 41.5$ ×2

$15x + 10y = 47.5$
$+ 14x - 10y = 83$
$29x = 130.5$
$x = 4.5$

$3(4.5) + 2y = 9.5$
$13.5 + 2y = 9.5$
$2y = -4$
$y = -2$

(Total for Question 2 is 4 marks)

3

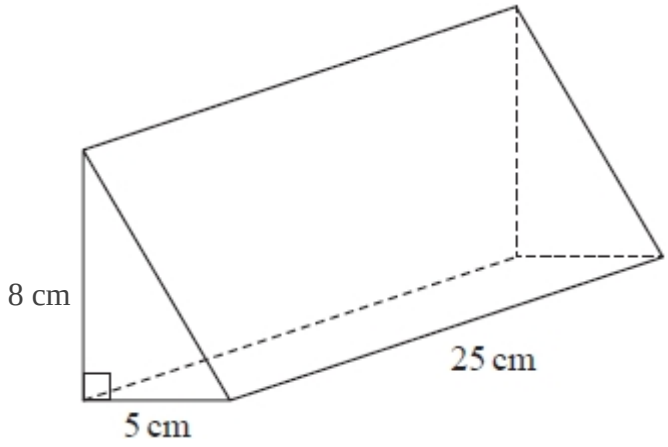
A number, n, is rounded to 2 significant figures.
The result is 2.3
Complete the error interval for n

$2.25 \leq n < 2.35$

(Total for Question 3 is 2 marks)

4

The diagram shows a prism.



The cross section of the prism is a right-angled triangle.

The base of the triangle has length 5 cm

The prism has length 25 cm

The mass of the prism is 250g.

Work out the density of the prism.

$\frac{8 \times 5}{2} \times 25 = 500 \text{ cm}^3$

250g : 500cm^3

0.5g : 1cm^3

0.5 g/cm^3

(Total for Question 4 is 3 marks)

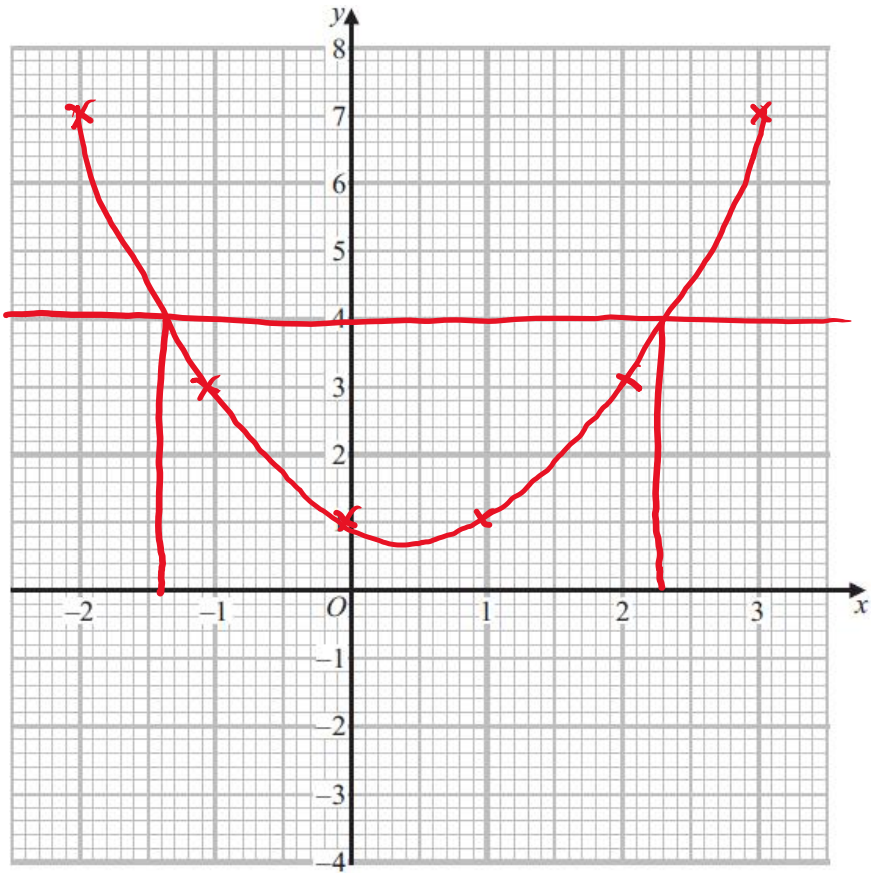
5

(a) Complete the table of values for $y = x^2 - x + 1$ for values of x from -2 to 3

x	-2	-1	0	1	2	3
y	7	3	1	1	3	7

(2)

(b) Draw the graph of $y = x^2 - x + 1$



(2)

(c) Estimate the solutions of $4 = x^2 - x + 1$

$y = 4$

$x = -1.4$

$x = 2.3$

(2)

(Total for Question 5 is 6 marks)

6

Sam invests £3500 into a bank account paying 5.4% compound interest, per annum, for 3 years.

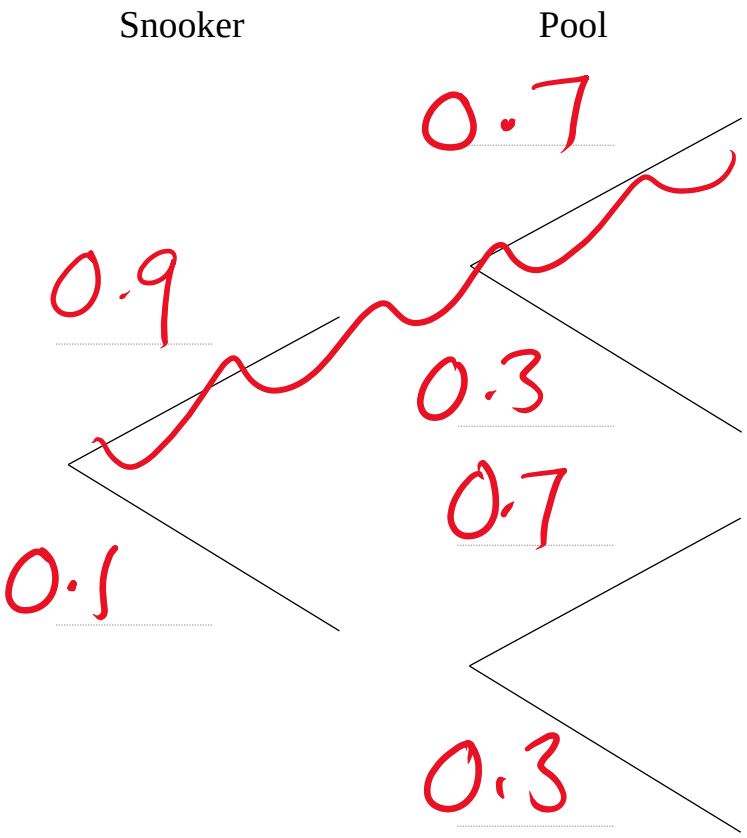
Work out the total amount of interest gained after 3 years.

$3500 \times 1.054^3 = 4098.16$

$4098.17 - 3500 = 598.16$

(Total for Question 6 is 3 marks)

7(a) Margot is going to play one game of snooker and one game of pool.
The probability that Margot wins a game of snooker is 0.9.
The probability that Margot does not win a game of pool is 0.3.



(2)

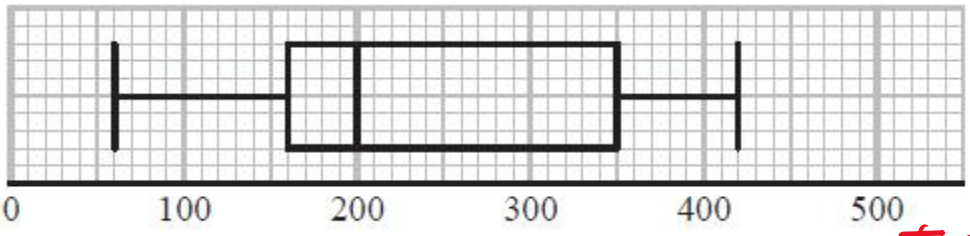
(b) Work out the probability that Margot wins at both snooker and pool.

$0.9 \times 0.7 = 0.63$

(2)

(Total for Question 7 is 4 marks)

8 The box plot shows information about the sales, in thousands of pounds, of Bennett's Bistro



M=200
IQR=190

Margot says,
'50% of the sales data is below £210,000 as the highest value is £420,000'
Margot is wrong.
(a) Explain why.

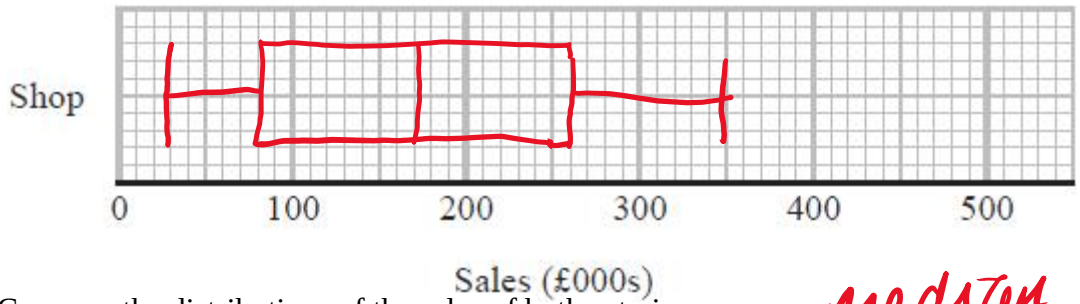
The median represent the 50% mark. That is £200,000.

(1)

	Sales (£000s)
least value	30
lower quartile	80
median	170
upper quartile	260
greatest value	350

M = 170
IQR = 180

(b) On the grid below, draw a box plot for the information given above about the sales from Buckley's Cafe



(2)

(c) Compare the distributions of the sales of both eateries.

median

Bennett bistro has higher sales 200,000 > 170,000
Buckley's cafe has more consistent sales
IQR is smaller 180000 > 170000

(2)

(Total for Question 8 is 5 marks)

9 In the 2026 local elections, a green party candidate received 244 votes. This represented 22% more votes than in 2025.

Work out the number of votes received in 2025.

$244 = 122\%$ $\div 1.22$

$200 = 100\%$

200

(Total for Question 9 is 2 marks)

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10 Simplify fully

$$\frac{60x^2 - 15}{2x + 1}$$

$$\frac{15(4x^2-1)}{2x+1} = \frac{15(2x+1)(2x-1)}{(2x+1)}$$

$15(2x-1)$ or $30x-15$

(Total for Question 10 is 2 marks)

11 In a restaurant, a 3-course set menu includes the following options:

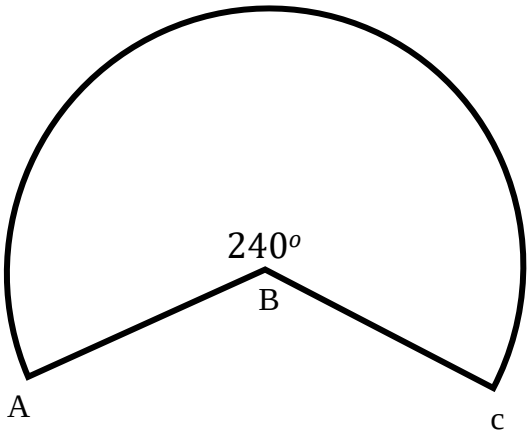
5 starters
8 mains
6 desserts

Work out the total number of combinations of starter, mains and desserts.

$3 \times 8 \times 6 = 144$

(Total for Question 11 is 2 marks)

12



The size of the reflex angle ABC is 240°
The length of arc AC is 8π
Work out the area of the sector

$\frac{240}{360} \times \pi \times D = 8\pi$

$D = 12$

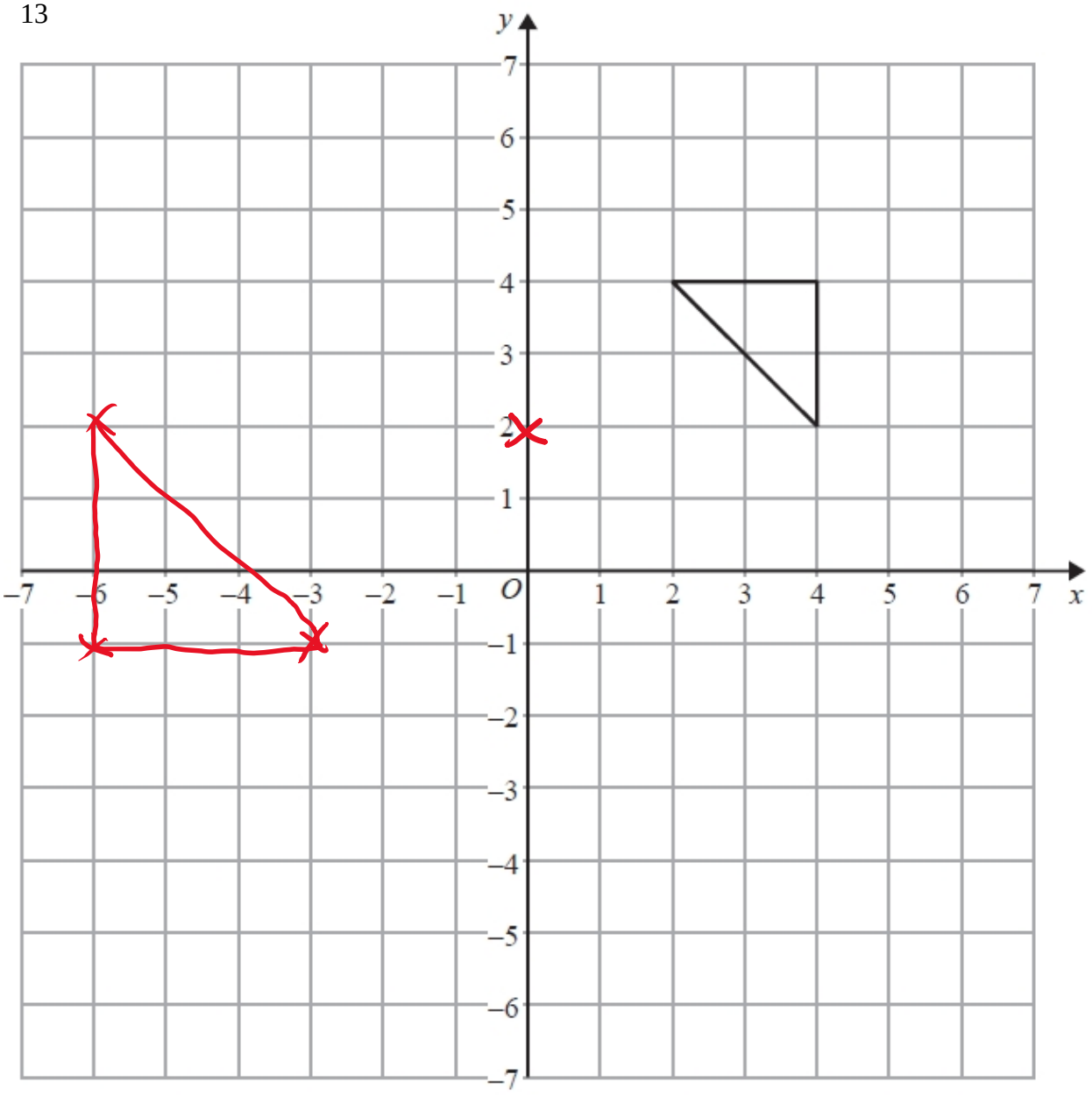
$r = 6$

$\frac{240}{360} \times \pi \times 6^2 = 24\pi$

$24\pi \text{ cm}^2$
or
75.4 cm^2

(Total for Question 12 is 3 marks)

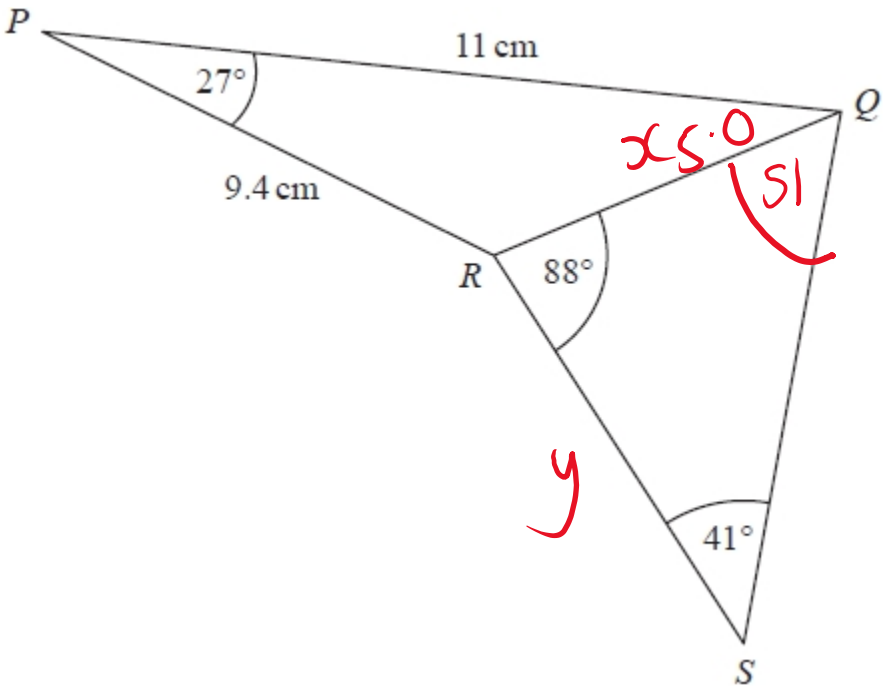
13



On the grid, enlarge the triangle by scale factor -1.5 with centre (0,2)

(Total for Question 13 is 3 marks)

14 PQR and QRS are triangles



Calculate the length of RS.

Give your answer correct to 3 significant figures.

You must show all of your working

$x = \sqrt{9.4^2 + 11^2 - 2 \times 9.4 \times 11 \times \cos(27)}$

$x = 5.0$

$\frac{y}{\sin(51)} = \frac{5}{\sin(41)}$ $\quad y = \frac{5}{\sin(41)} \times \sin(51)$

5.92

(Total for Question 14 is 4 marks)

15 Here are the first four terms of a quadratic sequence.

$$-3, 3, 13, 27$$

Work out an expression, in terms of n, for the nth term of the sequence

$-3, 3, 13, 27$

$+6 \quad +10 \quad +14$

$+4 \quad +4$

$2n^2$

$2n^2 = 2, 8, 18$

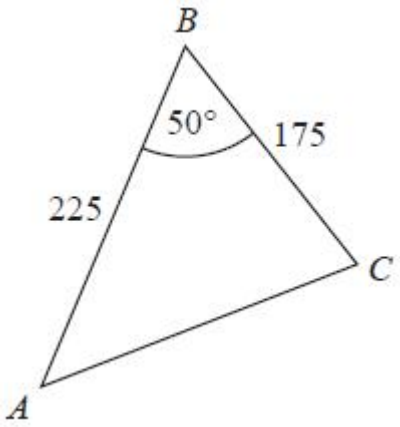
$-3, 3, 13$

$-5, -5, -5$

$2n^2 - 5$

(Total for Question 15 is 3 marks)

16 Sam measures a field.



The length AB measures 225m correct to the nearest 5m
The length BC measures 175m correct to the nearest 5m
Angle ABC measures 50° correct to the nearest degree.

Work out the upper bound for the area of the field.
You must show your working.

LB	UB
222.5	227.5
172.5	177.5
49.5	50.5

$\frac{1}{2} \times 227.5 \times 177.5 \times \sin(50.5)$

$= 15579.58$

(Total for Question 16 is 4 marks)

17

y is inversely proportional to d^4
When $y = 10$ and $d = 2$

d is directly proportional to $\sqrt{x}$
When $d = 20$ and $x = 25$

Write a formula for y in terms of x. Giving your answer in its simplest form

$y = \frac{k}{d^4}$

$10 = \frac{k}{2^4}$

$160 = k$

$y = \frac{160}{d^4}$

$d = k \times \sqrt{x}$

$20 = k \times \sqrt{25}$

$k = 4$

$d = 4\sqrt{x}$

$y = \frac{160}{(4\sqrt{x})^4}$

$y = \frac{160}{256x^2}$

$y = \frac{5}{8x^2}$

(Total for Question 17 is 4 marks)

18 There are 20 pupils in a class.
x are girls and the rest are boys.

$g = x$
$b = 20 - x$

Two pupils are going to be selected at random.

Work out the probability of selecting 1 girl and 1 boy, giving your answer in terms of x in its simplest form.

$$P(g,b) = \frac{x}{20} \times \frac{20-x}{19} = \frac{20x-x^2}{380}$$

+

$$P(b,g) = \frac{20-x}{20} \times \frac{x}{19} = \frac{20x-x^2}{380}$$

$$\frac{40x-2x^2}{380} = \frac{20x-x^2}{190}$$

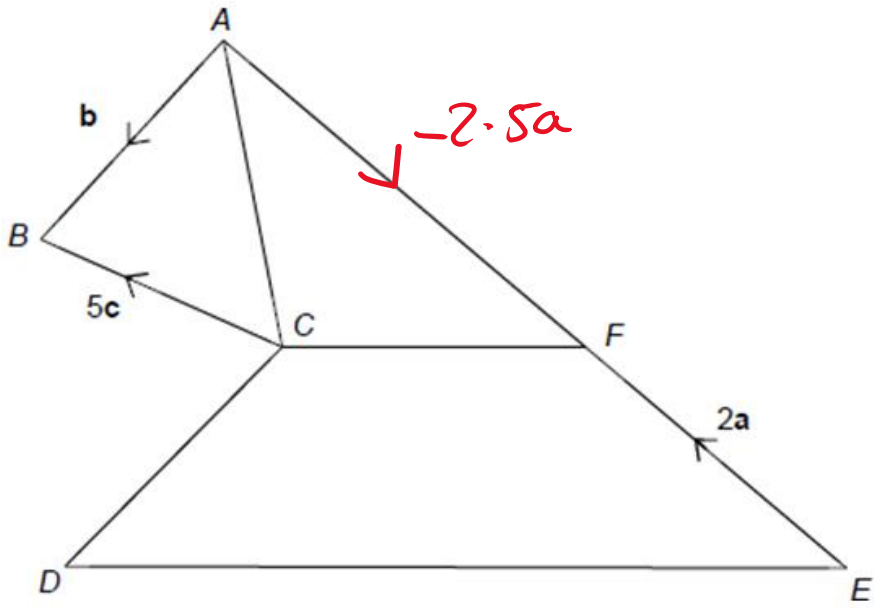
(Total for Question 18 is 4 marks)

19

AFE is a straight line.
AF : *FE* = 5 : 4
DE is parallel to *CF*.
DE = 2.5*CF*

$\overrightarrow{EF} = 2\mathbf{a}$ $\overrightarrow{AB} = \mathbf{b}$ $\overrightarrow{CB} = 5\mathbf{c}$

AF : FE
5 : 4
-2.5a -2a



Work out $\overrightarrow{DE}$ in terms of **a**, **b** and **c**.

$\overrightarrow{CF} = 5c - b - 2.5a$

$\overrightarrow{DE} = 2.5(5c - b - 2.5a)$

$\overrightarrow{DE} = 12.5c - 2.5b - 6.25a$

(Total for Question 19 is 4 marks)

20 $f(x) = 3x^2 - 2$ $g(x) = 2x + 3$

(a) Find fg(2)

$2(2)+3$
$= 7$

$3(7)^2 - 2$
$= 145$

145

(2)

(b) Find $f^{-1}(x)$

$y = 3x^2 - 2$
$x = 3y^2 - 2$
$x + 2 = 3y^2$

$\frac{x+2}{3} = y^2$

$\sqrt{\frac{x+2}{3}} = f^{-1}(x)$

(2)

(c) Solve $fg(x) = g^{-1}(5)$

$g^{-1}(x) = \frac{x-3}{2}$ $g^{-1}(5) = 1$

$3(2x+3)^2 - 2$
$3(4x^2+12x+9) - 2$
$12x^2 + 36x + 27 - 2 = 1$
$12x^2 + 36x + 24 = 0$
$x^2 + 3x + 2 = 0$
$(x+2)(x+1)$

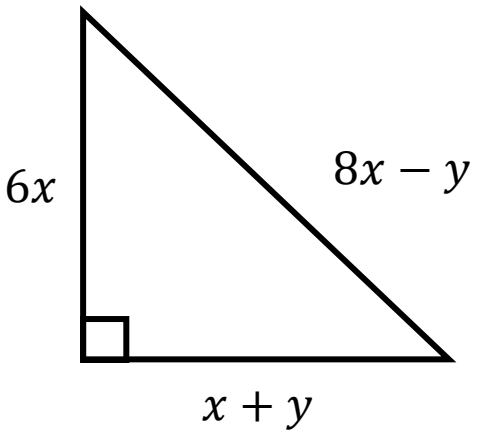
$x = -2, x = -1$

(4)

(Total for Question 20 is 8 marks)

21

The diagram shows a right-angled triangle



Prove algebraically that $x : y = 2 : 3$

$(6x)^2 + (x+y)^2 = (8x-y)^2$

$36x^2 + x^2 + 2xy + y^2 = 64x^2 - 16xy + y^2$

$18xy = 27x^2$

$18y = 27x$

$\frac{y}{27} = \frac{x}{18}$

$x : y$

$18 : 27$

$2 : 3$

(Total for Question 21 is 6 marks)